REMARKS

Claims 47–147 are pending in the application. Claims 47–52, 56, and 141 have been amended. Claims 47 – 62, 66–79, 141, and 143 remain in the application. New claims 148–155 have been added. Support for the new claims 148–155 can be found throughout the original specification.

Claim Rejections – 35 U.S.C. § 103

Claims 47–49, 51, 52, 66–79, and 143 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,585,103 to Fitzgerald in view of U.S. Patent No. 3,614,069 to Murry. Claims 50 and 53–61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fitzgerald in view of Murry as applied to claim 47, and further in view of U.S. Patent No. 5,993,671 to Peltzer. Applicants respectfully traverse these rejections to the extent they are maintained over the claims as amended.

Independent claim 47, as amended herein, is directed to an apparatus for processing one or more samples to produce a desired result, which includes, inter alia, a transducer for providing at least one focused acoustic field to the one or more samples, where the apparatus has only one transducer for providing an acoustic field to process the one or more samples to produce the desired result. The sample may be processed to "produce a desired result" such as, but without limitation, heating the sample, cooling the sample, fluidizing the sample, mixing the sample, stirring the sample, disrupting the sample, permeabilizing a component of the sample, enhancing a reaction in the sample, and sterilizing the sample (paragraph 0004 of the specification). The apparatus may have other transducers that do not provide an acoustic field to process a sample to produce the desired result, such as a transducer for detecting acoustic emissions or reflections from a sample, as recited in claims 57 and 58, respectively.

Pursuant to MPEP 2143.03, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)."

Fitzgerald discloses, in Figures 1 and 3, acoustic energy sources 20 and 52, respectively, for providing acoustic fields to potable juice to homogenize the juice and to destroy mold and bacteria present in the juice. The acoustic energy sources 20 and 52 each include a plurality of piezoelectric crystals for emitting acoustic energy to provide the acoustic field to process the potable juice. Fitzgerald does not teach or suggest providing an acoustic field to process a sample using only one piezoelectric crystal, or only one transducer of any other type. In fact, Fitzgerald teaches that the use of a plurality of piezoelectric crystals to process a sample is preferable, stating at column 1, lines 36–43:

> I have discovered, however, that by arranging a plurality of such smaller crystals in a mosaic pattern with all the crystals carefully matched as to oscillation frequency, and spaced with their centers separated by a distance equal to an odd multiple of their common wave length, and all located in a common plane, that their effect is cumulative.

Therefore, Fitzgerald does not teach or suggest an apparatus having only one transducer for providing an acoustic field to process a sample, as recited in claim 47, and in fact teaches away from such an apparatus.

Murry fails to overcome the deficiencies of Fitzgerald. Murry discloses, in Figures 1–3, tanks 10, 30, and 50, respectively, each containing a sample to which is applied an acoustic field provided by a plurality of transducers to cavitate, emulsify, or mix the sample. In particular, the acoustic field applied to sample 11 of Figure 1 is provided by transducers 14 and 16; the acoustic field applied to sample 48 of Figure 2 is provided by transducers 36a–36c, 41a–41f, 46a, 46b, and 47a–47c; and the acoustic field applied to the sample of Figure 3 is provided by transducers 56a–56k, 57a–57d, and 58a–58e. Murry does not teach or suggest providing an acoustic field to process a sample using only one transducer. In fact, the embodiment depicted in Figure 1, which has two transducers "mounted so that their energy is beamed toward each other so that the liquids within the tank 10 are excited causing cavitation and intermixing" (column 5, lines 65 – 68), is described as "the simplest apparatus for mixing substances according to this invention" (column 5, lines 49 -50), reflecting an expectation that two transducers are necessary to generate the desired sonic effects. An embodiment having fewer elements, such as an embodiment having only one transducer, would

be a simpler embodiment than that depicted in Figure 1, but clearly Murry does not view this as an effective configuration. Therefore, Murry does not teach or suggest an apparatus having only one transducer for providing an acoustic field to process a sample, as recited in claim 47.

U.S. Patent No. 5,993,671 to Peltzer is cited for disclosing a mixing system having a controller for controlling the flow of a sample and sensors for monitoring the state of treatment of the sample. Peltzer, however, does not overcome any of the deficiencies of Fitzgerald or Murry discussed above.

Thus, these references, whether taken singly or in combination, fail to teach or suggest all the elements of claim 47 as amended, such as an apparatus having only one transducer for providing an acoustic field to process a sample to achieve a desired result. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 48 – 61, 66–79, and 143 depend from claim 47 and are therefore also patentable for at least the reasons that claim 47 is patentable. With regards to claims 66–79 in particular, Applicants note that neither MPEP 2115, which was cited by the Office Action, nor any of the cases cited therein dictate that were a claim otherwise patentable, the inclusion within the claim of the material being worked upon would prevent its allowance. As such, Applicants submit that pursuant to MPEP 2143.03, which states "if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)," claims 66–79 should be deemed allowable as they depend from claim 47. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 62 and 141 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murry in view of Fitzgerald. Applicants respectfully traverse these rejections to the extent they are maintained over the claims as amended.

Independent claim 141, as amended herein, is directed to an apparatus for treating one or more samples, which includes, inter alia, a reaction vessel for holding the one or more samples, where each of the one or more samples are contained within a sample vessel capable of being

transported into the reaction vessel via an inlet and out of the reaction vessel via an outlet. Pursuant to MPEP 2143.03, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)."

Murry discloses, in Figures 1–3, tanks 10, 30, and 50, respectively, containing samples to which are applied acoustic fields. The samples are in direct contact with the tanks, and as such Murry does not teach or suggest any type of vessel for containing the samples that is capable of being transported into and out of the tank. Further, Murry does not teach or suggest transporting the tanks into and out of a reaction vessel. As such, Murry does not teach or suggest a reaction vessel for holding a sample that is contained within a sample vessel capable of being transported into and out of the reaction vessel. Murry therefore does not teach or suggest a reaction vessel for holding the one or more samples, where each of the one or more samples are contained within a sample vessel capable of being transported into the reaction vessel via an inlet and out of the reaction vessel via an outlet, as recited in claim 141.

Fitzgerald fails to overcome the deficiencies of Murry. Fitzgerald discloses, in Figures 1 and 3, tubes 39 and 51, respectively, containing samples to which are applied acoustic fields. The samples are in direct contact with the tubes, and as such Fitzgerald does not teach or suggest any type of vessel for containing the samples that is capable of being transported into and out of the tube. Further, Fitzgerald does not teach or suggest transporting the tubes into and out of a reaction vessel. As such, Fitzgerald does not teach or suggest a reaction vessel for holding a sample that is contained within a sample vessel capable of being transported into and out of the reaction vessel. Fitzgerald therefore does not teach of suggest a reaction vessel for holding the one or more samples, where each of the one or more samples are contained within a sample vessel capable of being transported into the reaction vessel via an inlet and out of the reaction vessel via an outlet, as recited in claim 141.

Thus, these references, whether taken singly or in combination, fail to teach or suggest all the elements of claim 141 as amended, such as a reaction vessel for holding the one or more

samples, where each of the one or more samples are contained within a sample vessel capable of being transported into the reaction vessel via an inlet and out of the reaction vessel via an outlet. Claim 62 depends from claim 141 and is therefore also patentable for at least the reasons that claim 141 is patentable. Therefore, reconsideration and withdrawal of these rejections are respectfully requested.

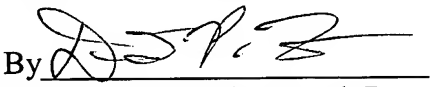
CONCLUSION

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the pending rejections. Applicants believe that the claims are now in condition for allowance and early notification to this effect is earnestly solicited. Any questions arising from this submission may be directed to the undersigned at (617) 951-7000.

Applicant believes no additional fee is due with this response, other than what is reflected on the enclosed transmittal. However, if a fee is due, please charge our Deposit Account No. 18-1945, under Order No. CVRS-P04-001 from which the undersigned is authorized to draw.

Dated: July 26, 2007

Respectfully submitted,

By 

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